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Let's Look at Timber

FOREST SERVICE
U. S. DEPARTMENT OF AGRICULTURE
Rocky Mountain Region
Roosevelt National Forest

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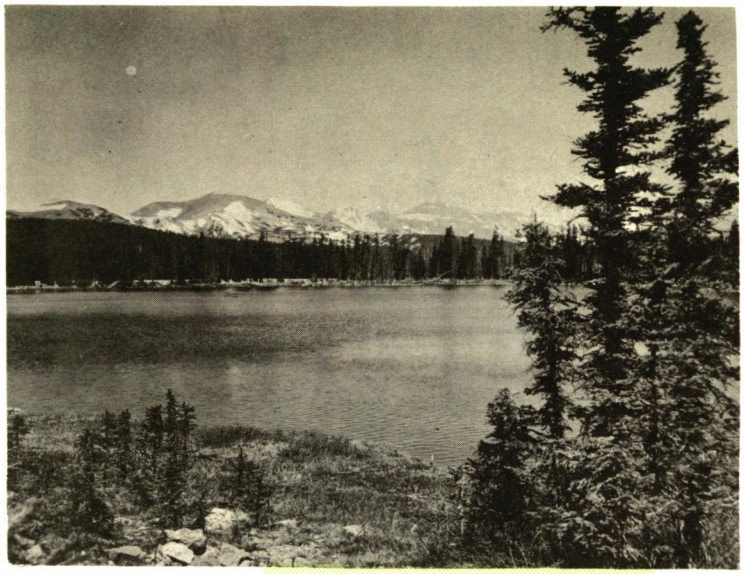
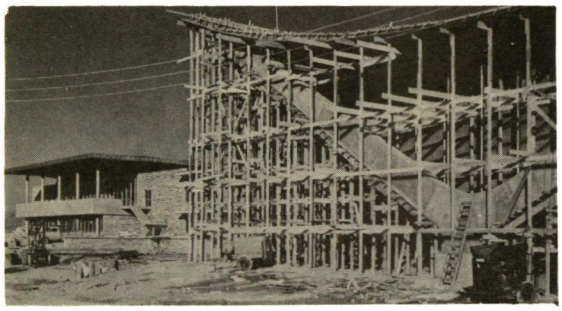
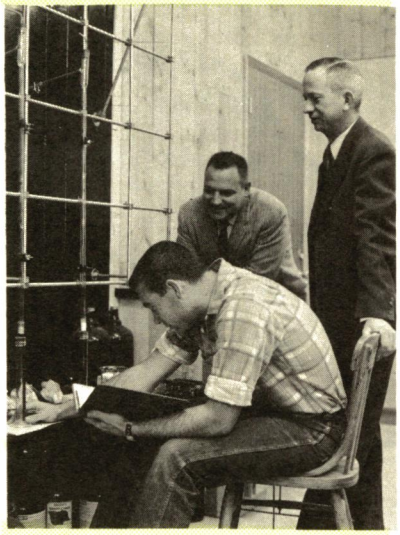
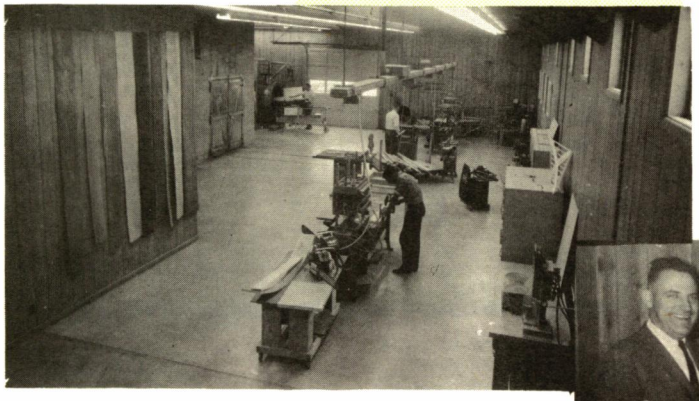
ROCKY MTN. FOREST & RANGE
EXPERIMENT STATION

Publication made possible by grants from the Fort Collins Chamber of Commerce and Colorado State University Research Foundation under a cooperative agreement with the Forest Service, U. S. Department of Agriculture.









Fort Collins Colorado

COUNTY SEAT OF LARIMER COUNTY

LOCATION: North-Central Colorado – 65 miles north of Denver, Colorado, and 45 miles southwest of Cheyenne, Wyoming.

POPULATION:

	City	County
1960	25,027	53,343
1950	14,937	43,554
1940	12,251	35,539

TRANSPORTATION: Two railroads – Colorado and Southern and Union Pacific with daily freight service, two bus lines, eight truck lines with daily freight service. Municipal airport with charter service. Highways – Interstate 25, U. S. 87 and 287, Colorado 14.

EDUCATION: Ten elementary schools, two junior high schools, and one high school. Additional schools planned, including a second high school and elementary schools. Total enrollment – 5,670. Students per teacher – 29.

COLORADO STATE UNIVERSITY: Six colleges offering degrees in Agriculture, Arts and Sciences, Engineering, Forestry, Home Economics, Veterinary Medicine. Also Graduate School. The University is strongly research oriented and has an established Industrial Research Park. Total enrollment exceeds 6,000.

CITY GOVERNMENT AND SERVICES: Council-Manager form of government. City departments include; Power, Water, Police, Fire, Street, Sanitary, Health, and Recreation. Police Department has a force of 25 with 5 radio equipped cars. The Fire Department has a force of 27 with two fire stations.

RECREATION: City maintains a recreation staff and program. Facilities in city area include; seven city public parks including two mountain parks, two golf courses, five tennis courts, three baseball fields, four basketball courts, three football fields, three bowling alleys, twelve private and one public swimming pools. Boating, fishing, and water sports at Horsetooth Reservoir. The million-acre Roosevelt National Forest and Rocky Mountain National Park provide a variety of recreation including fishing, camping, hiking, skiing.

CULTURAL AND ENTERTAINMENT: Public Library, Museum, Fine Arts Festival, Art League exhibits, community concerts, symphony orchestra, Town and Gown Theatre, Knife and Fork Club, baseball, football, track, basketball, and three movie theatres.

NEWSPAPER, RADIO AND TV: One daily newspaper and two radio stations. Excellent TV reception from five stations in Denver and one in Cheyenne.

TAXES:

City of Fort Collins	15.00 mills
Public School Fund	12.00 mills
County	8.60 mills
State	2.20 mills
Northern Colorado Water Conservancy Dist.	1.00 mills
Poudre R1 SD Bonds	5.20 mills
Poudre R1 Special Levy	15.70 mills
Poudre Hospital District	2.00 mills
TOTAL	61.70 mills *

* Based on 1960 mill levies.

Property is assessed at 30 to 35 per cent of normal market value.

MAIL: Eight outgoing dispatches daily and eight incoming receipts daily.

CLIMATE: Fort Collins has a very pleasant four-season climate. The average annual precipitation is 14.77 inches. The mean temperature for January is 26.1° F., April is 46.1°F., July 69.4°F., and October is 48.6°F. The relative humidity is low. The average for the year at 7:00 a.m. and 7:00 p.m. is 66.5 per cent. Summer mid-day humidity is 30 per cent and winter mid-day humidity is 43 per cent. The altitude is 5,004 feet.

HOSPITAL: Larimer County Hospital with 129 beds.

LABOR FORCE:

Auto Mechanics	110
Bricklayers	30
Carpenters	240
Construction Laborers	200
Common Laborers	100
Electricians	45
Operating Engineers	100
Plasterers	15
Plumbers	30
Sheet Metal Workers	30
Truck Drivers	200
Seasonal farm laborers	500
Clerical Workers	1100
Sales Clerks, Salesperson and Salesmen	500
Telephone Workmen & Operators	100
Gas Fitters	55
Electrical Linemen & Groundmen	50
Welders and Pipefitters	30
Cement Finishers	35
Painters	70

Manufacturing Production Workers	Male	Female
	870	70

INDUSTRIAL SITES: There are two privately owned industrial parks. Two railroads have industrial properties. The Fort Collins Industrial Fund, Inc. is approved by the Small Business Administration for SBA Loans.

FUEL & POWER: Natural gas supplied by Public Service Company of Colorado. Electricity supplied by City of Fort Collins, Public Service Company of Colorado and Rural Electric Association.

Contributions to written material made by the Fort Collins Chamber of Commerce, Colorado State University Wood Utilization Laboratory and the Rocky Mountain Forest and Range Experiment Station.

SPECIES SUITABILITY

Major species available to Fort Collins and the immediate vicinity are lodgepole pine, Engelmann spruce, sub-alpine fir, ponderosa pine, along with lesser amounts of Douglas-fir. These species are in strong demand for conventional lumber products. They also have additional properties that make them suitable for a much wider range of products than those presently manufactured.

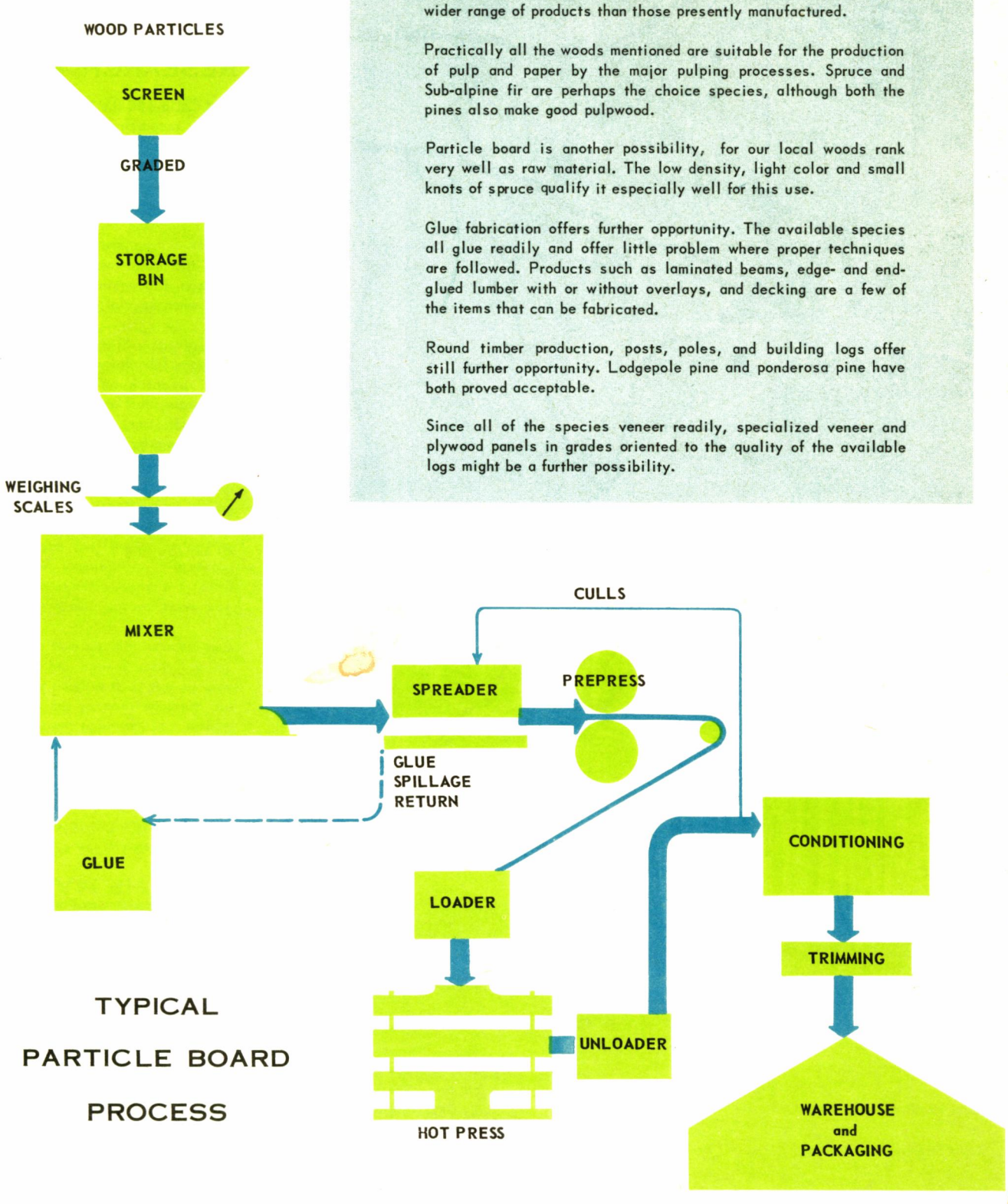
Practically all the woods mentioned are suitable for the production of pulp and paper by the major pulping processes. Spruce and Sub-alpine fir are perhaps the choice species, although both the pines also make good pulpwood.

Particle board is another possibility, for our local woods rank very well as raw material. The low density, light color and small knots of spruce qualify it especially well for this use.

Glue fabrication offers further opportunity. The available species all glue readily and offer little problem where proper techniques are followed. Products such as laminated beams, edge- and end-glued lumber with or without overlays, and decking are a few of the items that can be fabricated.

Round timber production, posts, poles, and building logs offer still further opportunity. Lodgepole pine and ponderosa pine have both proved acceptable.

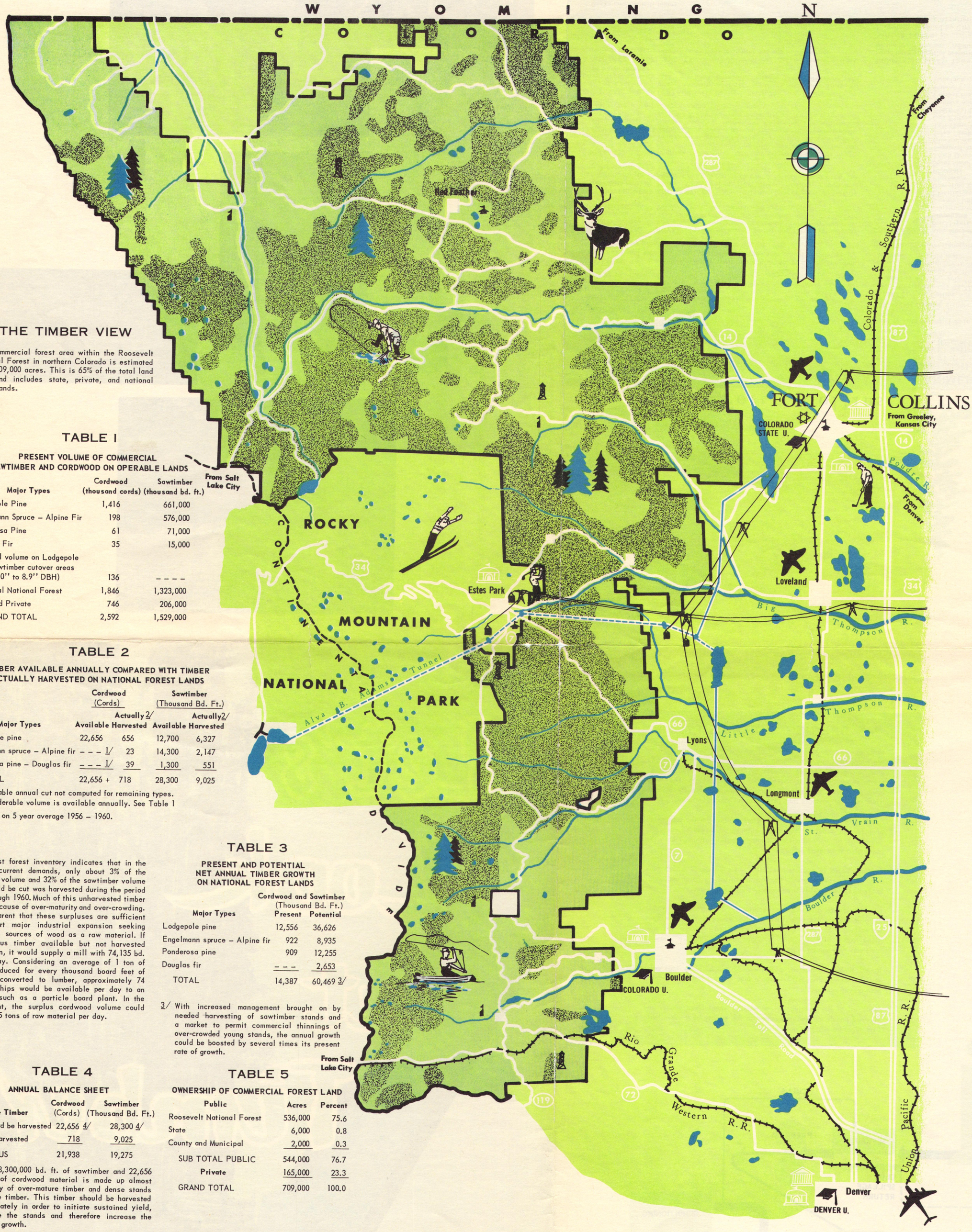
Since all of the species veneer readily, specialized veneer and plywood panels in grades oriented to the quality of the available logs might be a further possibility.



TYPICAL PARTICLE BOARD PROCESS

Colorado's Horn of Plenty

THE ROOSEVELT NATIONAL FOREST through PROPER TIMBER HARVESTING increases WATER-RECREATION-WILDLIFE-FORAGE benefits THE COMMUNITY



THE TIMBER VIEW

The commercial forest area within the Roosevelt National Forest in northern Colorado is estimated to be 709,000 acres. This is 65% of the total land area and includes state, private, and national forest lands.

TABLE 1

PRESENT VOLUME OF COMMERCIAL SAWTIMBER AND CORDWOOD ON OPERABLE LANDS

Major Types	Cordwood (thousand cords)	Sawtimber (thousand bd. ft.)
Lodgepole Pine	1,416	661,000
Engelmann Spruce – Alpine Fir	198	576,000
Ponderosa Pine	61	71,000
Douglas Fir	35	15,000
Residual volume on Lodgepole Pine Sawtimber cutover areas (trees 5.0" to 8.9" DBH)	136	– – – –
Sub Total National Forest	1,846	1,323,000
State and Private	746	206,000
GRAND TOTAL	2,592	1,529,000

TABLE 2

TIMBER AVAILABLE ANNUALLY COMPARED WITH TIMBER ACTUALLY HARVESTED ON NATIONAL FOREST LANDS

Major Types	Cordwood (Cords) Available	Cordwood (Cords) Actually 2/ Harvested	Sawtimber (Thousand Bd. Ft.) Available	Sawtimber (Thousand Bd. Ft.) Actually 2/ Harvested
Lodgepole pine	22,656	656	12,700	6,327
Engelmann spruce – Alpine fir	– – – 1/	23	14,300	2,147
Ponderosa pine – Douglas fir	– – – 1/	39	1,300	551
TOTAL	22,656 +	718	28,300	9,025

1/ Allowable annual cut not computed for remaining types. Considerable volume is available annually. See Table 1

2/ Based on 5 year average 1956 – 1960.

The latest forest inventory indicates that in the face of current demands, only about 3% of the cordwood volume and 32% of the sawtimber volume that should be cut was harvested during the period 1956 through 1960. Much of this unharvested timber is lost because of over-maturity and over-crowding. It is apparent that these surpluses are sufficient to support major industrial expansion seeking additional sources of wood as a raw material. If the surplus timber available but not harvested were taken, it would supply a mill with 74,135 bd. ft. per day. Considering an average of 1 ton of chips produced for every thousand board feet of sawlogs converted to lumber, approximately 74 tons of chips would be available per day to an industry such as a particle board plant. In the same light, the surplus cordwood volume could supply 145 tons of raw material per day.

TABLE 3

PRESENT AND POTENTIAL NET ANNUAL TIMBER GROWTH ON NATIONAL FOREST LANDS

Major Types	Cordwood and Sawtimber (Thousand Bd. Ft.) Present	Potential
Lodgepole pine	12,556	36,626
Engelmann spruce – Alpine fir	922	8,935
Ponderosa pine	909	12,255
Douglas fir	– – –	2,653
TOTAL	14,387	60,469 3/

3/ With increased management brought on by needed harvesting of sawtimber stands and a market to permit commercial thinnings of over-crowded young stands, the annual growth could be boosted by several times its present rate of growth.

TABLE 4

ANNUAL BALANCE SHEET

The Timber	Cordwood (Cords)	Sawtimber (Thousand Bd. Ft.)
That should be harvested	22,656 4/	28,300 4/
Actually harvested	718	9,025
SURPLUS	21,938	19,275

4/ The 28,300,000 bd. ft. of sawtimber and 22,656 cords of cordwood material is made up almost entirely of over-mature timber and dense stands of pole timber. This timber should be harvested immediately in order to initiate sustained yield, release the stands and therefore increase the annual growth.

TABLE 5

OWNERSHIP OF COMMERCIAL FOREST LAND

Public	Acres	Percent
Roosevelt National Forest	536,000	75.6
State	6,000	0.8
County and Municipal	2,000	0.3
SUB TOTAL PUBLIC	544,000	76.7
Private	165,000	23.3
GRAND TOTAL	709,000	100.0

THE MARKET

Forest industry in the Fort Collins area would be ideally situated to meet market demands. Wyoming borders the area on the north with coast to coast rail service out of Cheyenne and Laramie. Major highways and railroads also connect the area to the south through Denver and Colorado Springs. To the east is the drainage area of the South Platte River with its highly developed irrigated farm lands. To the west towers the Continental Divide with its many outstanding resort areas.

The most recent* market study shows that there is a definite market and need for native products. The minimum market possibility of 60,736,000 board feet annually is above the available annual cut on the Roosevelt National Forest at the present time. Area trends show that building will continue to rise for the next several years. The market potential of areas to the East and South, within a radius of several hundred miles, appears to be especially promising.

From the viewpoint of available raw materials, transportation, electric power, labor supply, and living conditions, the Roosevelt area has much to offer new or expanding wood-using industries.

*Market study in 1940

EXISTING WOOD USING INDUSTRIES

Potential newcomers to the area may be particularly interested in the production of the wood processing operations in the area. Some of these operations are possible suppliers of raw materials and semi-processed goods. Approximately 33 tons per day of wood waste is accumulated as an aftermath of lumber production from the Roosevelt area.

TABLE 6

Locality	Product	Production* (MBM)
Fort Collins	Finished Lumber	4500
Fort Collins	Rough Lumber	600
Fort Collins	Posts and Poles	300
LaPorte	Dimension and Rough Lumber	1000
Redfeather	House Logs, Knotty Pine	600
Redfeather	Rough Lumber	400
Estes Park	Rough Lumber	300
Lyons	Finished Lumber	1000
TOTAL		8700

*Approximate production.

RESEARCH FACILITIES

Fort Collins is the headquarters for two well-known research organizations that work to improve our local forest products. These are the Rocky Mountain Forest and Range Experiment Station and the College of Forestry at Colorado State University.

The experiment station also has a direct tie-in with the world-famous Forest Laboratory at Madison, Wisconsin, and can draw on its facilities when special problems arise.

At Colorado State University, the wood-products laboratory is well equipped to conduct research on our local species. The laboratory staff and other university research personnel can serve in numerous ways to assist industry with its problems.

ADDITIONAL INFORMATION MAY BE OBTAINED FROM:

FOREST RESOURCES AND THEIR MANAGEMENT
Forest Supervisor
Roosevelt National Forest
Fort Collins, Colorado

State Forester
Colorado State University
Fort Collins, Colorado

WATER RESOURCES
Northern Colorado Water Conservancy District
Loveland, Colorado

City Manager
Municipal Building
Fort Collins, Colorado

ECONOMIC AND DEVELOPMENT
Chamber of Commerce
Fort Collins, Colorado

Director
Resources and Community Development
Department of Employment
1210 Sherman Street
Denver 3, Colorado

TIMBER PROCESSING AND MANUFACTURE
College of Forestry
Wood Laboratory
Colorado State University
Fort Collins, Colorado

Director
Rocky Mountain Forest and Range Experiment Station
Colorado State University
Fort Collins, Colorado

LABOR RESOURCES
Colorado Department of Employment
Employment Agency
141 West Mountain Avenue
Fort Collins, Colorado

Student Employment
Administration Department
Colorado State University
Fort Collins, Colorado

COMMUNITY INDUSTRIAL DEVELOPMENT CORPORATIONS
Fort Collins Industrial Fund, Inc.
146 North College
Fort Collins, Colorado

COUNTY SEAT
Fort Collins, Colorado

Cordwood Areas

Sawtimber Areas
Above areas include posts, poles, grass and non-productive lands

Major Highways and Roads

Major Streams and Rivers

Major Irrigation Ditches

Major Water Diversion Tunnels

Reservoirs, Lakes, and Ponds

Roosevelt National Forest Boundary

Continental Divide

Colorado-Wyoming line

Ranger District Headquarters

Ranger Guard Stations

Fire Lookout Towers

Forest Supervisor's Headquarters
State Forester's Headquarters

Cities and Towns

Hydro-electric Plants

Power Lines

Airports

Major Railroads

Museums, Historical Buildings

Theatres, Music and Dance Festivals

Major Universities